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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RICHARD Y. CHEN and MIHAELA SCHAAR

Appeal 2007-3282
Application 10/028,386¹
Technology Center 2600

Decided: May 16, 2008

Before ALLEN R. MACDONALD, SCOTT R. BOALICK,
and MARC S. HOFF, *Administrative Patent Judges*.

BOALICK, *Administrative Patent Judge*.

¹ Application filed December 21, 2001. The real party in interest is Koninklijke Philips Electronics N.V.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134(a) from the rejection of claims 1, 4-8, 11-13, 15-19, and 21-25, all the claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm-in-part.

STATEMENT OF THE CASE

Appellants' invention relates to scalable processing of an enhancement layer in a layered video coding system.

Claims 1 and 12 are exemplary:

1. A layered video encoding system, comprising:

a base layer encoder that is configured to receive a video signal and to provide a base layer stream based on the video signal; and

an enhancement layer encoder that is configured to receive a difference signal and to provide an enhancement layer video stream based on the difference signal, and includes:

a plurality of discrete cosine transform (DCT) modules, each providing a different precision, and

a selection system that is configured to select a DCT module of the plurality of DCT modules for performing DCT computation on the difference signal.

12. A layered video decoding system, comprising:

a base layer decoder for receiving and decoding a base layer video stream; and

an enhancement layer decoder for receiving an enhancement layer video stream and generating a decoded enhanced video output, wherein:

the base layer decoder includes a single inverse discrete cosine transform (IDCT) module, and

the enhancement layer decoder includes:

a plurality of IDCT modules; and

a selection system for selecting an IDCT module of the plurality of IDCT modules based on factors including an available level of computing resources.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Mishima	US 5,488,418	Jan. 30, 1996
Strongin	US 5,872,866	Feb. 16, 1999
De Bonet	US 6,510,177 B1	Jan. 21, 2003 (filed Mar. 24, 2000)
Wu	US 6,614,936 B1	Sep. 2, 2003 (filed Dec. 3, 1999)

Claims 8 and 18 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter.

Claims 1, 4-8, 11, and 22-25 stand rejected under 35 U.S.C. § 103(a) as being obvious over Wu and Mishima.

Claims 12, 13, 15-19, and 21 stand rejected under 35 U.S.C. § 103(a) as being obvious over De Bonet and Strongin.

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the Brief and the Answer for their respective details. Only those arguments actually made by Appellants have been considered in this decision. Arguments that Appellants did not make in the Brief have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).²

ISSUES

The first issue is whether Appellants have shown that the Examiner erred in rejecting claims 8 and 18 under 35 U.S.C. § 101.

The second issue is whether Appellants have shown that the Examiner erred in rejecting claims 1, 4-8, 11, and 22-25 under 35 U.S.C. § 103(a). The issue turns on whether Wu and Mishima teach or suggest a plurality of discrete cosine transform (DCT) modules, each providing a different precision.

The third issue is whether Appellants have shown that the Examiner erred in rejecting claims 12, 13, 15-19, and 21 under 35 U.S.C. § 103(a). The issue turns on whether the teachings of De Bonet and Strongin properly may be combined.

² Except as will be noted in this opinion, Appellants have not presented any substantive arguments directed separately to the patentability of the dependent claims or related claims in each group. In the absence of a separate argument with respect to those claims, they stand or fall with the representative independent claim. *See* 37 C.F.R. § 41.37(c)(1)(vii).

PRINCIPLES OF LAW

On appeal, all timely filed evidence and properly presented arguments are considered by the Board. *See In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984).

In the examination of a patent application, the Examiner bears the initial burden of showing a *prima facie* case of unpatentability. *Id.* at 1472. When that burden is met, the burden then shifts to the Applicant to rebut. *Id.*; *see also In re Harris*, 409 F.3d 1339, 1343-44 (Fed. Cir. 2005) (finding rebuttal evidence unpersuasive). If the Applicant produces rebuttal evidence of adequate weight, the *prima facie* case of unpatentability is dissipated. *In re Piasecki*, 745 F.2d at 1472. Thereafter, patentability is determined in view of the entire record. *Id.* However, on appeal to the Board it is an appellant's burden to establish that the Examiner did not sustain the necessary burden and to show that the Examiner erred. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection [for obviousness] by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.") (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

"Section 103 forbids issuance of a patent when 'the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.'" *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1734 (2007). In *KSR*, the Supreme Court reaffirmed that "[t]he combination of familiar elements according to known methods is likely to be obvious

when it does no more than yield predictable results." *Id.* at 1739. The Court explained:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

Id. at 1740. The Court also explained that:

[o]ften, it will be necessary . . . to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.

Id. at 1740-41.

"[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d at 988. "To facilitate review, this analysis should be made explicit." *KSR*, 127 S. Ct. at 1741. However, "the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *Id.*

"Under the correct analysis, any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed." *KSR*, 127 S. Ct. at 1742. The Court also noted that "[c]ommon sense teaches . . . that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle." *Id.* at 1742. "A person of ordinary skill is also a person of ordinary creativity, not an automaton." *Id.*

During examination of a patent application, a claim is given its broadest reasonable construction consistent with the Specification. *In re Prater*, 415 F.2d 1393, 1404-05 (CCPA 1969). "[T]he words of a claim 'are generally given their ordinary and customary meaning.'" *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (internal citations omitted). The "ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Id.* at 1313.

ANALYSIS

Appellants contend that the Examiner erred in rejecting claims 1, 4-8, 11-13, 15-19, and 21-25. Reviewing the record before us, we agree with Appellants that the Examiner erred in rejecting claims 8 and 18 as being directed to non-statutory subject matter and in rejecting claims 1, 4-8, 11, and 22-25 as being obvious over Wu and Mishima. However, we do not agree that the Examiner erred in rejecting claims 12, 13, 15-19, and 21 as being obvious over De Bonet and Strongin. In particular, we find that the

Appellants have not shown that the Examiner failed to make a prima facie showing of obviousness with respect to claims 12, 13, 15-19, and 21. Appellants failed to meet the burden of overcoming that prima facie showing.

Rejections under 35 U.S.C. § 101

We agree with Appellants (Br. 7) that the Examiner erred in rejecting claims 8 and 18 under 35 U.S.C. § 101. The Examiner found that these claims do "not define a computer-readable medium or memory" (Ans. 9) and that the scope of the claims "can range from paper on which the program is written, to a program simply contemplated and memorize by a person" (Ans. 9-10). We do not agree with the Examiner.

Claim 8 recites "A computer-readable storage medium storing computer program product including executable instructions for encoding a layered video signal" and claim 18 recites "A computer-readable storage medium storing computer program product including executable instructions for decoding a layered video stream."

The Specification teaches that:

The present invention can also be embedded in a computer program product, which comprises all the features enabling the implementation of the methods and functions described herein, and which - when loaded in a computer system - is able to carry out these methods and functions. Computer program, software program, program, program product, or software, in the present context mean any expression, in any language, code or notation, of a set of instructions intended to cause a system having an information processing capability to perform a particular function either directly or after either or both of the following:

(a) conversion to another language, code or notation; and/or (b) reproduction in a different material form.

(Spec. 8:18 to 9:3.)

We find that the "computer program product" stored on the "computer-readable storage medium" recited by claims 8 and 18 is in reference to the "computer program product" discussed in the Specification. The recited "computer program product" is directed to functional descriptive material that, when recorded on the recited "computer-readable storage medium," becomes structurally and functionally interrelated to the medium and the function of the descriptive material may be realized through the use of technology. Thus, claims 8 and 18 are directed to functional descriptive material stored on a computer readable medium, and therefore are statutory. *See In re Lowry*, 32 F.3d 1579, 1583-84 (Fed. Cir. 1994),

Accordingly, we conclude that Appellants have shown that the Examiner erred in rejecting claims 8 and 18 under 35 U.S.C. § 101.

Rejections under 35 U.S.C. § 103(a) - Wu / Mishima

With respect to independent claim 1, we agree with Appellants (Br. 9) that neither Wu nor Mishima teach or suggest "a plurality of discrete cosine transform (DCT) modules, *each providing a different precision*" (emphasis added), as claimed.

The Examiner found that:

Wu does not specifically disclose wherein each of the plurality of DCT modules comprises a different precision. However, Mishima teaches the use of a plurality of discrete cosine transform (DCT) modules . . . (fig.50B, Mishima discloses the

use of multiple DCT modules 77 . . . wherein each DCT 77 comprises its own precision).

(Ans. 5.) However, contrary to the Examiner's findings, we do not find a teaching or suggestion in Mishima of a plurality of DCT modules each having a different precision.

Figures 50(A) and 50(B) of Mishima "show the configuration of the encoder of the thirteenth embodiment." (Mishima col. 24, ll. 9-10.) Figure 50(A) discloses a single DCT module 73 "which performs the DCT." (Mishima col. 24, ll. 18-19.) Figure 50(B) shows "another configuration of the thirteenth embodiment." (Mishima col. 24, ll. 19-20.) In particular, Figure 50(B) discloses a plurality of DCT modules 77 "which perform the DCT." (Mishima col. 24, ll. 22-23.) According to Mishima, "FIG. 50(A) is an embodiment in which the DCT circuit 73 is commonly owned and the blocking state is switched by the switch 72, and FIG. 50(B) is an embodiment in which outputs of the DCT circuits 77 are switched by the switch 79." (Mishima col. 24, ll. 27-30.)

Thus, Mishima does not teach that each of the plurality of DCT modules 77 in Figure 50(B) has a different precision. To the contrary, Mishima strongly implies that the DCT modules 77 are identical because the implementation of Figure 50(B) is another configuration of the same embodiment shown by Figure 50(A), which only has one DCT module 73. We find nothing in Wu to cure this deficiency of Mishima.

Therefore, we conclude that Appellants have shown that the Examiner erred in rejecting claim 1. Claims 4-7 and 22-23 depend from claim 1, and we find that the Examiner erred in rejecting these claims for the same reasons as discussed with respect to claim 1.

Independent claim 8 recites, similarly to independent claim 1, "a plurality of discrete cosine transform (DCT) modules, *each providing a different precision*" (emphasis added). As discussed with respect to independent claim 1, we have found this feature to be lacking from Wu and Mishima. Therefore, we conclude that Appellants have shown that the Examiner erred in rejecting claim 8. Claims 24-25 depend from claim 8, and we find that the Examiner erred in rejecting these claims for the same reasons as discussed with respect to claim 8.

Independent claim 11 recites, similarly to independent claim 1, "*wherein each of the plurality of DCT modules provides a different precision*" (emphasis added). As discussed with respect to independent claim 1, we have found this feature to be lacking from Wu and Mishima. Therefore, we conclude that Appellants have shown that the Examiner erred in rejecting claim 11.

Rejections under 35 U.S.C. § 103(a) - De Bonet / Strongin

Appellants have argued claims 12, 13, 15-19, and 21 together as a group. (Br. 11-12.) Thus, in accordance with 37 C.F.R. § 41.37(c)(1)(vii), we select claim 12 as representative.

Appellants argue that there is no motivation to combine De Bonet and Strongin. (Br. 11-12). Furthermore, Appellants argue that neither De Bonet nor Strongin teach or suggest "an enhancement layer decoder with a plurality of IDCT modules" (Br. 12), as claimed. In particular, although Appellants admit that "De Bonet provides encoded enhancement layer data that can be selectively decoded to a desired/subscribed level of resolution/fidelity" (Br. 11) and that "Strongin teaches a plurality of inverse

discrete cosine transforms" (Br. 11), Appellants argue that Strongin "does not teach that these transforms are used to decode an enhancement layer" (Br. 11). We do not agree.

As the Examiner correctly found, De Bonet teaches an enhancement layer decoder (Ans. 6-7) and Strongin teaches a plurality of IDCT modules (Ans. 7). Strongin also teaches that "[t]he video decoding apparatus taught herein is advantageous for greatly reducing the computational burden of video decoding by selecting a highly efficient inverse discrete cosine transform (IDCT) which is optimized for particular picture characteristics." (Strongin col. 4, ll. 1-5.) Appellants admit that "[b]oth DeBonet and Strongin teach techniques for providing variable display resolution/fidelity." (Br. 12.)

Therefore, we agree with the Examiner that it would have been obvious to a person of ordinary skill in the art at the time of the invention to have combined the plural IDCT modules taught by Strongin into the enhancement layer decoder of De Bonet in order to reduce the computational burden of the video decoding. (Ans. 7, 14-15.) This is merely the combination of familiar elements according to known methods, with no unpredictable results. *See KSR*, 127 S. Ct. at 1739.

Accordingly, we conclude that Appellants have not shown that the Examiner erred in rejecting claim 12 under 35 U.S.C. § 103(a). Claims 13, 15-19, and 21 were argued as a group with claim 12, and fall together with claim 12.

CONCLUSION OF LAW

Based on the findings of facts and analysis above, we conclude that:

- (1) Appellants have shown that the Examiner erred in rejecting claims 8 and 18 under 35 U.S.C. § 101.
- (2) Appellants have shown that the Examiner erred in rejecting claims 1, 4-8, 11, and 22-25 for obviousness under 35 U.S.C. § 103.
- (3) Appellants have not shown that the Examiner erred in rejecting claims 12, 13, 15-19, and 21 for obviousness under 35 U.S.C. § 103.

DECISION

The rejection of claims 8 and 18 under 35 U.S.C. § 103 is reversed.

The rejection of claims 1, 4-8, 11, and 22-25 for obviousness under 35 U.S.C. § 103 is reversed.

The rejection of claims 12, 13, 15-19, and 21 for obviousness under 35 U.S.C. § 103 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED-IN-PART

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